

**AMENDMENTS TO THE CLAIMS**

1-5. (Canceled)

6. (Currently amended) ~~The method according to claim 1 comprising the steps consisting of: A method for effecting a homologous recombination between a double-stranded native nucleic acid segment in a cell and a donor nucleic acid segment introduced into the cell, which method comprises the steps consisting of:~~

- a) providing a pair of primers complementary to the 5' and 3' ends of a first double-stranded native nucleic acid sequence, wherein one of the primers is a modified adapter segment which contains one or several ribonucleotide(s) at its 3'-end, wherein said adapter segment is linked to a third strand oligonucleotide which comprises a base sequence capable of forming a triple helix at a binding region on one or both strands of a second double-stranded native nucleic acid segment;
- b) amplifying said first native nucleic acid sequence,
- c) isolating the amplification product thus obtained,
- d) treating the isolated amplification product in conditions sufficient to allow destruction of said ribonucleotide, thereby providing a nucleic acid targeting system comprising:
  - (i) said third strand oligonucleotide,
  - (ii) said amplification product as a donor nucleic acid segment comprising a nucleic acid sequence substantially homologous to the native nucleic acid segment so that the donor sequence is capable of undergoing homologous recombination with the native sequence at the target region,
  - (iii) said adapter segment bound to said donor nucleic acid segment through Watson-Crick base pairing, the adapter segment being linked to said third strand oligonucleotide,

- e) introducing said nucleic acid targeting system into a cell *ex vivo* comprising a second native nucleic acid different from the first native nucleic acid;
- f) allowing ~~the nucleotide~~ said third strand oligonucleotide to bind to the second native nucleic acid segment to form a triple helix nucleic acid, thereby inducing homologous recombination at the native nucleic acid segment target region; and
- g) allowing homologous recombination to occur between the native and donor nucleic acid segments;

wherein said donor nucleic acid is between more than 100 and 1,000,000 bases in length.

7. (Original) The method according to claim 6, wherein step d) comprises enzymatic or mild alkaline treatment.

8-26. (Canceled)